PROCEEDINGS OF THE BIOLOGICAL SOCIETY OF WASHINGTON
115(3):611–615. 2002.

A new shrimp species of *Plesionika* Bate, 1888 with high basal rostral crest (Crustacea: Decapoda: Pandalidae) from Taiwan

Tin-Yam Chan and Shiz-Chang Chuang

Institute of Marine Biology, National Taiwan Ocean University, Keelung 202, Taiwan, R.O.C.

Abstract.—A new shrimp species of the genus *Plesionika* Bate, 1888 is described based on specimens collected in deep-water off eastern Taiwan. The new species, *P. albocristata,* can be readily distinguished from other species of the genus by bearing a high basal rostral crest, having the second pereiopods subequal, and the telson bearing four pairs of dorsolateral spines. A brief discussion on the affinities of this new species is given.

Shrimps of the genus *Plesionika* Bate, 1888 are common and diverse in the catches of deep-sea commercial trawlers in Taiwan. However, reports on the species of this genus from Taiwan are scattered (Chan & Yu 1991, 2000; Chan & Crosnier 1991, 1997; Chan, in press) mainly due to the confusing taxonomy in many species of this large genus which contains at least 80 species (Chan & Yu 2000). Although a more extensive account of the *Plesionika* fauna of Taiwan is still in preparation, one of the species found is very unique and worthy of reporting promptly to provide a better understanding of the morphological diversity in this taxonomically complicated genus. The new species described herein has a high basal rostral crest. At present, only two known *Plesionika* species, namely *P. rostricrescentis* (Bate, 1888) and *P. lophotes* Chace, 1985, have high basal rostral crests. *Plesionika rostricrescentis* and *P. lophotes* are very similar but the new species differs from these in important characters; such as pereiopods II being subequal, and the telson bearing four pairs of dorsolateral spines. The affinities of the new species are unclear though it appears to be closer to *P. carsini* Crosnier, 1986 and *P. poupini* Chan & Crosnier, 1997 than to other known species of the genus.

The specimens are deposited at the National Taiwan Ocean University (NTOU) and the National Museum of Natural Science, Taichung (NMNS). The measurement used is carapace length (cl), measured dorsally from the orbital margin to the posterior margin of the carapace.

Plesionika albocristata, new species
Figs. 1, 2

Holotype.—♀ ovig. cl 22.0 mm, Taiwan, NE coast, Su-Aou fishing port, I-Lan County, commercial trawlers, about 350 m, 12 Mar 1997, NTOU H-1997-3-12.

Paratypes.—Taiwan, NE coast, Su-Aou fishing port, I-Lan County, commercial trawlers, about 350 m: 3 ♂ cl 17.6–19.1 mm, 2 ♀ ovig. cl 16.1 and 18.7 mm, 5 ♀ cl 16.2–21.1 mm, 6 Aug 1996, NTOU P-1996-8-6 (transferred to NMNS); 3 ♂ cl 17.4–20 mm, 2 ♀ ovig. cl 17.8, 20.3 mm, 12 Mar 1997, NTOU P-1997-3-12; 1 ♂ cl 18.8 mm, 1 ♀ ovig. cl 21.3 mm, 28 May 1997, NTOU P-1997-5-28; 1 ♂ cl 15.6 mm, 5 Dec 1997, NTOU P-1997-12-5.—TAIWAN 2000, R/V *Fisheries Research 1,* stn DW 45, 22°48.3′N, 121°27.4′E, waren dredge, 423 m, 2 Aug 2000: 1 ♀ cl 12.5 mm, NTOU P-2000-8-2.

Description.—Body robust. Rostrum with lateral carina strong in basal 0.3 section and more or less continuous with orbital margin; basal part broad and nearly

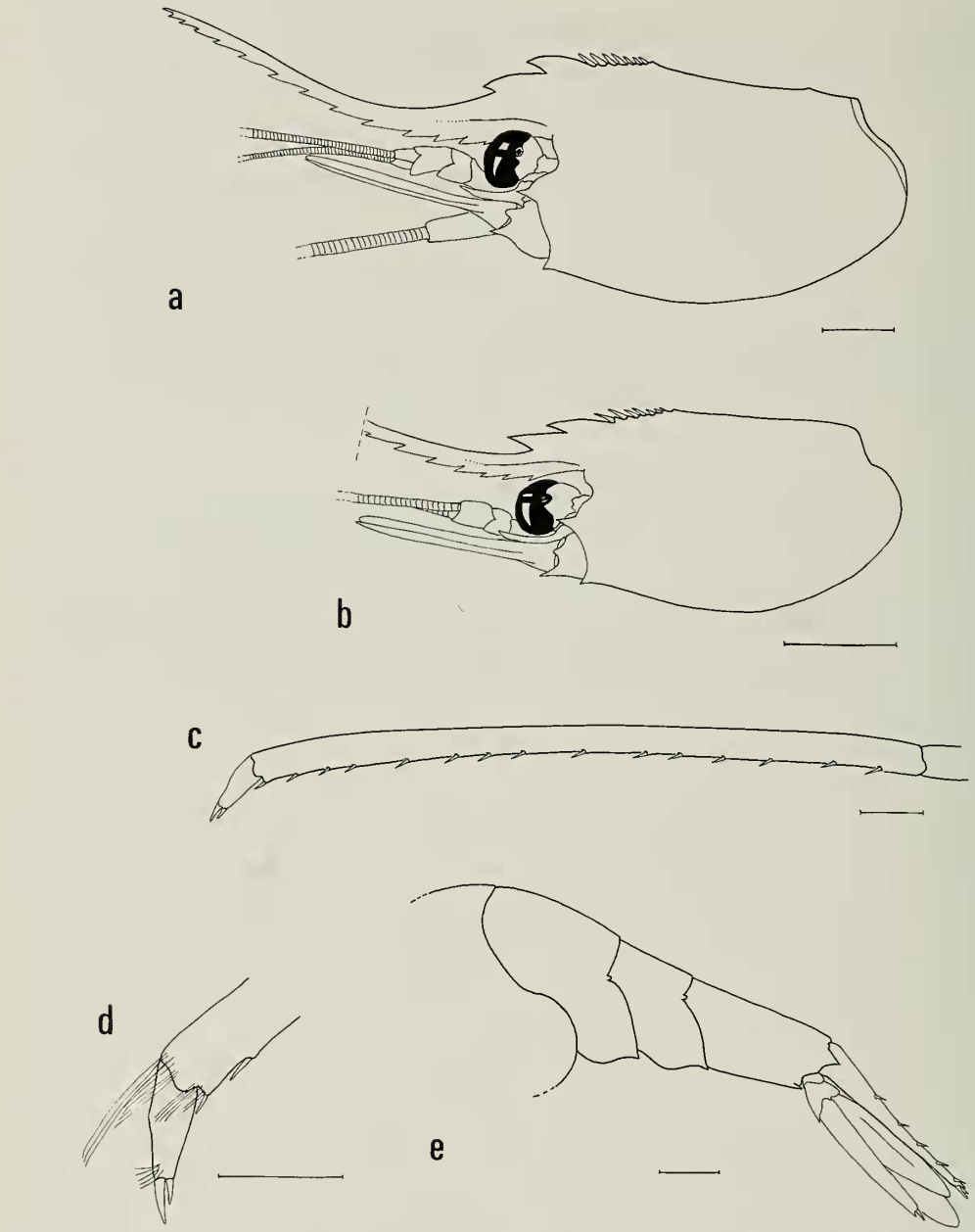

Fig. 1. *Plesionika albocristata,* new species, all in lateral views. a, e, holotype ♀ ovig. cl 22.0 mm, NTOU H-1997-3-12; b, paratype ♀ cl 12.5 mm, NTOU P-2000-8-2; c–d, paratype ♀ ovig. cl 17.8 mm, NTOU P-1997-3-12: a–b, carapace; c, propodus and dactylus of pereiopod III, setae omitted; d, dactylus of pereiopod III; e, posterior abdomen and tailfan. Scales equal 5 mm.

horizontal, becoming narrow and curving upwards beyond antennular peduncle; overreaching scaphocerite and 1.2–1.4 times as long as carapace; anterodorsal carapace and basal part of rostrum above orbit strongly elevated and crest-like (higher in large specimens), basal rostral crest bearing 2 large lamellate fixed teeth (posterior larg-

est) and rather horizontal row of 7 or 8 (rarely 9) densely packed small movable teeth, all movable teeth situated posterior to orbital margin, other part of dorsal border of rostrum generally devoid of tooth; ventral border of rostrum evenly distributed with 9–13 teeth, those near tip sometimes small and indistinct (Fig. 1a). Orbital margin with upper lobe feebly convex and inclined forwards dorsally, middle part regularly concave, lower lobe slightly convex. Eye subglobular and bearing distinct ocellus. Antennal spine well developed. Pterygostomian spine small but distinct. Stylocerite tapered distally, nearly horizontal and slightly folded laterally, extending to about middle of second segment of antennular peduncle. Scaphocerite 3.4–4.1 times as long as broad, distolateral tooth more or less reaching distal margin of lamella. Basicerite spine moderately long and extending to around proximal end of outer margin of scaphocerite.

Maxilliped III bearing well developed epipod and long strip-like exopod, penultimate segment 0.8–0.9 times as long as distal segment, overreaching scaphocerite by half to nearly entire length of distal segment. Anterior four pereiopods bearing well developed epipods, pereiopod V without epipod. Pereiopod I exceeding scaphocerite by 0.3 length of carpus and chela or by chela only. Pereiopods II subequal, bearing 19–24 (often 20–22) carpal articles, exceeding scaphocerite by 0.2 to very short length of carpus and entire chela. Pereiopod III overreaching scaphocerite by almost entire carpus as well as other distal segments; propodus 0.5–0.6 times as long as carapace, dorsally with row of long setae and ventrally having 2 rows of dense spinules and setae; dactylus conical and short, about 0.1 times as long as propodus (Fig. 1c), posterior margin lacking spines, accessory spine about half as long as and separated from terminal spine (Fig. 1d); tips of both propodus and dactylus bearing tufts of long setae, those of propodus as long as and covering dactylus. Pereiopods IV and V similar to pereiopod III, former overreaching scaphocerite by 0.6 to 0.8 carpus, latter exceeding scaphocerite by 0.3–0.5 carpus as well as other distal segments.

Abdominal somite III weakly arched dorsally, posterior margin convex. Both abdominal pleura IV and V generally bearing distinct posteroventral denticle. Abdominal somite VI 1.8–2.1 times as long as deep. Telson 1.1–1.3 times longer than abdominal somite VI, usually bearing 4 pairs of dorsolateral spines and 3 pairs of terminal spines (Fig. 1e). Eggs without visible eyes suboval and about 0.4 mm in diameter.

Coloration (Fig. 2).—Carapace orange-red and with anterior margin deep red. Rostrum and basal rostral crest whitish. Eyes black-brown. Scaphocerite, antennular and antennal peduncles whitish but base of antenna deep red. Antennular and antennal flagella orange. Maxilliped III reddish but with distal part of distal third, penultimate and basal part of distal segments whitish. Pereiopods red and white. Abdomen scattered with orange-red pigments except abdominal somite VI entirely orange-red. Tailfan whitish and with distal parts of uropods sometimes orange-red. Pleopods pale pink. Eggs orange-red.

Size.—Males cl 15.6–20.0 mm; females cl 12.5–22.0 mm; ovigerous females cl 16.1–22.0 mm.

Remarks.—The high basal rostral crest of *Plesionika albocristata,* new species, can be readily separated from all other *Plesionika* species except *P. rostricresentis* and *P. lophotes. Plesionika rostricresentis* and *P. lophotes* also have a high basal rostral crest but they differ from *P. albocristata* in bearing only three pairs of dorsolateral spines on the telson and having the second pair of pereiopods very unequal. It may need to point out that recently many new forms are discovered in the "*P. rostricresentis–P. lophotes*" species complex (Chan, in press). Other than the differences mentioned above, *P. albocristata* differs considerably from the "*P. rostricresentis–P. lophotes*" species complex in lacking subapical dorsal

Fig. 2. *Plesionika albocristata,* new species, Taiwan, NE coast, Su-Aou fishing port, about 350 m, holotype ♀ ovig. cl 22.0 mm, NTOU H-1997-3-12.

rostral teeth, having longer abdominal somite VI, abdominal somite III only weakly arched dorsally, the orbital margin and the dactyli of the posterior three pereiopods having a different shape.

The development of the basal rostral crest is related to the size of the specimens in *Plesionika albocristata,* with larger specimens having a higher basal rostral crest (Fig. 1a). In specimens smaller than cl 17 mm, the basal rostral crest is low though the anterior two fixed teeth are still large and lamellate (Fig. 1b). In contrast, sexual dimorphism in the height of the basal rostral crest is slight and only with the basal part of the rostrum somewhat directed more downwards in males.

The dorsal margin of the rostrum anterior to the two large teeth on the basal rostral crest is usually devoid of teeth in this species. Only in one specimen (♀ ovig. cl 16.1 mm) there is a small dorsal denticle near the tip of the rostrum, and this is probably an abnormal condition. Moreover, the telson generally bears four pairs of dorsolateral spines but in two specimens there are five pairs of spines.

If not considering the high basal rostral crest, the general appearance of *Plesionika albocristata* shows some resemblances with *P. carsini* and *P. poupini.* Nevertheless, the presence of only two dorsal rostral teeth, the longer abdominal somite VI, the shorter propodi and the different dactylus shape of the posterior three pereiopods seem sufficiently preventing *P. albocristata* from grouping with *P. carsini* and *P. poupini.* The exact affinity of *P. albocristata* in the genus remains mostly unclear.

Etymology.—The proposed name *albocristata,* means "white crested", as Latin *crista* meaning "tuft, comb, or plume" is the noun; the adjectival form *cristata* means "crested".

Distribution.—So far only known from eastern Taiwan, at depths of about 350 to 423 m.

Acknowledgments

This work is a contribution from a research grant supported by the National Science Council, Taiwan, R.O.C.

Literature Cited

Bate, C. S. 1888. Report on the Crustacea Macrura collected by the Challenger during the years 1873–76. Report on the Scientific Results of the Voyage of H. M. S. "Challenger" during the Years 1873–76, 24: xc+942 pp., figs. 1–76, pls 1–157.

Chace, F. A., Jr. 1985. The caridean shrimps (Crustacea: Decapoda) of the *Albatross* Philippine expedition, 1907–1910, part 3. Families Thalassocarididae and Pandalidae.—Smithsonian Contributions to Zoology (411):1–143.

Chan, T.-Y. On the "*Plesionika rostricrescentis* (Bate, 1888)" and "*P. lophotes* Chace, 1985" groups (Crustacea: Decapoda: Pandalidae), with descriptions of five new species. B. Dayrat, ed., Tropical Deep-Sea Benthos.—Mémoires du Muséum national d'Histoire naturelle (in press).

Chan, T.-Y., & A. Crosnier. 1991. Crustacea Decapoda: Studies on the *Plesionika narval* (Fabricius, 1787) group (Pandalidae), with descriptions of six new species. *In* A. Crosnier (ed.), Résultats des Campagnes MUSORSTOM, vol. 9.—Mémoires du Muséum national d'Histoire naturelle, (A), 152:413–461.

———, & ———. 1997. Crustacea Decapoda: deep-sea shrimps of the genus *Plesionika* Bate, 1888 (Pandalidae) from French Polynesia, with descriptions of five new species. *In* A. Crosnier, ed., Résultats des Campagnes MUSORSTOM, vol. 18.—Mémoires du Muséum national d'Histoire naturelle, 176:187–234.

———, & H.-P. Yu. 1991. Two similar species: *Plesionika edwardsii* (Brandt, 1851) and *Plesionika crosnieri,* new species (Crustacea: Decapoda: Pandalidae).—Proceedings of the Biological Society of Washington, 104(3):545–555.

———, & ———. 2000. A new deep-sea shrimps of the genus *Plesionika* Bate, 1888 (Crustacea: Decapoda: Pandalidae) from Taiwan.—National Taiwan Museum Special Publication Series, 10: 119–127.

Crosnier, A. 1986. Crevettes de la famille des Pandalidae récoltées durant ces dernières années en Polynésie française. Description de *Plesionika chacei et P. carsini* spp. nov.—Bulletin du Muséum national d'Histoire naturelle, Paris, 4ème série, section A, 8(2):361–377.